

### **REMARKS/ARGUMENTS**

1. Applicant has considered the office action dated May 18, 2004. Applicant respectfully submits that the amendments and the following remarks are fully responsive to the office action.
2. Applicant has amended the claims in light of the office action. Applicant respectfully submits that no new matter has been added as a result of the amendment.
3. In paragraph 2 of the Office Action, the Examiner has maintained the rejection of claim 9 as being anticipated by Chan et al.
4. As amended, claim 9 defines a thermoelastic actuator. Applicant respectfully submits that the actuator of claim 9 is not the same as the "thermomechanical sensor" of Chan et al.
5. In support of this, the Applicant respectfully cites MPEP 2111, where it is set out that "...the PTO applies to verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in applicant's specification."
6. On page 2 of the written description of the present application, it is set out that: "it is important to clarify that thermoelastic actuation is characterized using force, deflection and temperature as opposed to switching, which is characterized using deflection and temperature rise alone." Furthermore, it is respectfully submitted that a person skilled in the art would understand that in micro-electromechanical systems, a "thermoelastic actuator" would have the characteristics of force, deflection and temperature as opposed to deflection and temperature alone.
7. Claim 9, as amended, is directed to a thermoelastic actuator. Chan et al, on the other hand, is directed to a thermo-mechanical sensor. In particular, in Chan et al the illustrative embodiment is an "integrated sensor" that includes a switch detecting circuit region 12 and a sensor switching region 20..." (column 5, lines 12 to 15, read with reference to figure 2). Thus, Applicant respectfully submits that claim 9, as amended, is directed to a thermoelastic actuator that comprises an expansive element, while Chan et al is directed to a micro-electromechanical switch with an expansive element. As set out above, the Applicant has taken care to distinguish the "thermoelastic actuator" from such a switch.
8. The Examiner has stated that "it is elementary that the mere recitation of a newly discovered function or property, inherently possessed by things in the prior art does not cause a claim drawn to distinguish over the prior art." Furthermore, the Examiner has stated that the properties exerted in the claims are "inherent in the claimed metal compounds disclosed".

9. The Applicant has explained in the "Background of the Invention" of the present application that the requirements of the material for the expansive element are different to those of a micro-electromechanical switch. This is relevant in the light of *In Re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) where it was held that the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. Further, in *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981) it was held that to establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill'.
10. Still further, in *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd.Pat.App. & Inter 1990) it was held that: "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art".
11. In view of the above paragraphs, Applicant respectfully submits that the Examiner cannot, from a reading of the cited prior art, support the statement that the properties set out in the claims, as amended, are inherent in the metal compounds. In particular, Applicant respectfully submits that the only manner in which the Examiner could make such a statement is upon a reading of the written description of the present application.
12. To summarize, the Applicant respectfully argues that the invention as claimed in claim 9 is a thermoelastic actuator and not a switch and that the properties of the materials described in claim 9 are only apparent upon a reading of the written description, without any extrinsic evidence. Thus, Applicant respectfully submits that the rejection in paragraph 2 of the office action is successfully traversed.
13. In paragraph 3 of the office action, the Examiner has maintained the rejection of claims 7 and 9 under 35 U.S.C. 102(e) as being anticipated by Carr.
14. Claim 7 has been amended to emphasize the fact that the invention is directed to a thermoelastic actuator. As set out above, the meaning of "thermoelastic actuator" is determined by the fact that such an actuator requires certain characteristics of force, deflection and temperature, rather than just deflection and temperature.
15. Carr discloses a latching micro-accelerometer. The device of Carr includes a reset means in the form of a cantilever that provided a "thermal bimorph" to achieve displacement, and thus re-setting. It follows that Carr is not directed to a thermoelastic actuator.
16. Since Carr does not disclose a thermoelastic actuator, the arguments set out above concerning inherency are applicable. In particular, it is respectfully submitted that Carr does not provide the necessary extrinsic evidence. Furthermore, it is respectfully submitted that the Examiner has not provided "a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art" in this case Carr.

17. The difference between claim 7 and claim 9 is limited simply to materials for the expansive element of the thermoelastic actuator. It follows that the arguments set out above are also applicable to the rejection of claim 9 in the light of Carr.
18. Applicant therefore respectfully submits that the rejection in paragraph 3 of the office action is successfully traversed.
19. In paragraph 5 of the office action, the Examiner has maintained the rejection of claims 5, 7 and 9 under 35 U.S.C. 103(a) as being unpatentable over Yang et al and Ozaki et al.
20. As with claims 7 and 9, claim 5 has been amended to emphasize the fact that the invention defined in claim 5 is a thermoelastic actuator.
21. In paragraph 5 the Examiner has stated that: "The applicant is reminded that one cannot show non-obviousness by attacking the references individually where the rejection is based on the combination of references."
22. Applicant respectfully submits that the case of *Hodosh v Block Drug Co. Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed Cir. 1986) is apposite. In this case it was held that the "references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination. Furthermore, this case also sets out that references must be viewed without the benefit of impermissible hindsight.
23. Furthermore, in the matter of *In re Gorman*, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed.Cir.1991), it was held that obviousness cannot be established by hindsight combination to produce the claimed invention. It is the prior art itself, and not the applicant's achievement, that must establish the obviousness of the invention.
24. Ozaki et al is directed to "electric contact materials, production methods thereof and electric contacts". Column 1, lines 10 to 14 of Ozaki et al sets out that: "The present invention relates to low-cost electric contact materials having high hardness and high melting point and being excellent in the wear resistance..."
25. Claims 5, 7 and 9 are all directed to thermoelastic actuators. It is thus respectfully submitted that to combine Ozaki et al with any other document would require a person skilled in the art to have some knowledge of the present application. The reason for this is that Ozaki et al contains no reference to a thermoelastic actuator. It follows that a person of ordinary skill in the art would have no reason to consider Ozaki et al in combination with any other document when seeking suitable materials for thermoelastic actuators.
26. Thus, Applicant respectfully submits that the rejection in paragraph 5 of the office action is successfully traversed.

## CONCLUSION

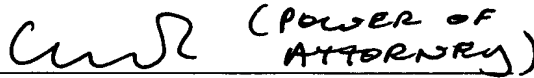
It is respectfully submitted that all of the Examiner's objections have been successfully traversed. Accordingly, it is submitted that the application is now in condition for allowance. Reconsideration and allowance of the application are courteously solicited.

Very respectfully,

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